

### Abstract of the Disclosure

A speech detection apparatus using basis functions, which are trained by independent component analysis (ICA) and method thereof are provided. The speech detection method includes the steps of training basis functions of speech signals and basis functions of noise signals according to a predetermined learning rule, adapting the basis functions of noise signals to the present environment by using the characteristic of noise signals, which are input into a mike, extracting determination information for detection speech activation from the basis functions of speech signals and the basis functions of noise signals, and detecting a speech starting point and a speech ending point of mike signals, which are come into a speech recognition unit, from the determination information.